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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Docket No. **AUS990809US1**

jc678 U.S. PTO 09/478309 01/06/00

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the patent application of Inventor(s):

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For: **METHOD AND APPARATUS FOR SECURING A COOKIE CACHE IN A DATA PROCESSING SYSTEM**

Enclosed are also:

X 17 Pages of Specification including an Abstract
X 9 Pages of Claims
X 4 Sheet(s) of Drawings
X A Declaration and Power of Attorney
X Form PTO 1595 and assignment of the invention to IBM Corporation

CLAIMS AS FILED

FOR	Number Filed		Number Extra		Rate		Basic Fee
							~~($760)~~ 690
Total Claims	38	-20 =	18	X	$ 18	=	$324.00
Independent Claims	7	-3 =	4	X	$ 78	=	$312.00
Multiple Dependent Claims	0			X	$260	=	$0
	~~1326~~				**Total Filing Fee**	=	~~$1,396.00~~ 1324 ~~1326~~

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X Any additional filing fees required under 37CFR § 1.16.

X Any patent application processing fees under 37CFR § 1.17.

Respectfully,

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METHOD AND APPARATUS FOR SECURING A COOKIE CACHE IN A DATA PROCESSING SYSTEM

BACKGROUND OF THE INVENTION

1. Technical Field:

The present invention relates generally to an improved data processing system and in particular to a method and apparatus for securing data in a data processing system. Still more particularly, the present invention provides a method and apparatus for securing cookies in a data processing system.

2. Description of Related Art:

The Internet, also referred to as an "internetwork", is a set of computer networks, possibly dissimilar, joined together by means of gateways that handle data transfer and the conversion of messages from the sending network to the protocols used by the receiving network (with packets if necessary). When capitalized, the term "Internet" refers to the collection of networks and gateways that use the TCP/IP suite of protocols.

The Internet has become a cultural fixture as a source of both information and entertainment. Many businesses are creating Internet sites as an integral part of their marketing efforts, informing consumers of the products or services offered by the business or providing other information seeking to engender brand loyalty. Many federal, state, and local government agencies are also employing Internet sites for informational purposes, particularly agencies which must interact with virtually

all segments of society such as the Internal Revenue Service and secretaries of state. Providing informational guides and/or searchable databases of online public records may reduce operating costs. Further, the Internet is becoming increasingly popular as a medium for commercial transactions.

Currently, the most commonly employed method of transferring data over the Internet is to employ the World Wide Web environment, also called simply "the Web". Other Internet resources exist for transferring information, such as File Transfer Protocol (FTP) and Gopher, but have not achieved the popularity of the Web. In the Web environment, servers and clients effect data transaction using the Hypertext Transfer Protocol (HTTP), a known protocol for handling the transfer of various data files (e.g., text, still graphic images, audio, motion video, etc.).

The information in various data files is formatted for presentation to a user by a standard page description language, the Hypertext Markup Language (HTML). In addition to basic presentation formatting, HTML allows developers to specify "links" to other Web resources identified by a Uniform Resource Locator (URL). A URL is a special syntax identifier defining a communications path to specific information. Each logical block of information accessible to a client, called a "page" or a "Web page", is identified by a URL. The URL provides a universal, consistent method for finding and accessing this information, not necessarily for the user, but mostly for the user's Web "browser". A browser is a program capable of submitting a request for information identified

by a URL at the client machine. Retrieval of information on the Web is generally accomplished with an HTML-compatible browser. The Internet also is widely used to transfer applications to users using browsers. With respect to commerce on the Web, individual consumers and businesses use the Web to purchase various goods and services.

In browsing the Web, a user at a Web browser may see a question or warning as to whether a cookie should be accepted. A cookie is opaque data representing a resource on a client. An example of a cookie is the disk location of a file on a client machine. It may be necessary for a remote host, such as a Web server, to write a file or access some other resource on the client machine. The cookie provides a convenient mechanism for a host or server to access information on a client machine. In some cases, a host or server may be a malicious one in that the cookie is altered by the host such that the remote host is able to access information or files that have not been authorized by the user.

Therefore, it would be advantageous to have an improved method and apparatus for securing cookies in a data processing system to prevent unauthorized access of resources on a data processing system by a remote host or server.

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SUMMARY OF THE INVENTION

The present invention provides a method and apparatus in a data processing system for providing access to resources within the data processing system. A request is received from a requestor to access a resource in the data processing system. A cookie is sent to the requestor, wherein the cookie is used to access the resource. An identification of the requestor and the cookie is stored to form a stored identification and a stored cookie. Responsive to receiving a subsequent cookie from a source, an identification of the source and the cookie is compared with the stored identification and the stored cookie. Responsive to a match between the identification of the source and the cookie and the stored identification and the stored cookie, access to the resource is allowed.

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BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

Figure 1 depicts a pictorial representation of a distributed data processing system in which the present invention may be implemented;

Figure 2 is a block diagram illustrating a data processing system in which the present invention may be implemented;

Figure 3 is a block diagram of a browser program depicted in accordance with a preferred embodiment of the present invention;

Figure 4 is a diagram of a cookie cache depicted in accordance with a preferred embodiment of the present invention;

Figure 5 is a flowchart of a process for generating cookies depicted in accordance with a preferred embodiment of the present invention; and

Figure 6, is a flowchart of a process for managing the receipt of cookies depicted in accordance with a preferred embodiment of the present invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the figures, **Figure 1** depicts a pictorial representation of a distributed data processing system in which the present invention may be implemented. Distributed data processing system **100** is a network of computers in which the present invention may be implemented. Distributed data processing system **100** contains a network **102**, which is the medium used to provide communications links between various devices and computers connected together within distributed data processing system **100**. Network **102** may include permanent connections, such as wire or fiber optic cables, or temporary connections made through telephone connections.

In the depicted example, a server **104** is connected to network **102** along with storage unit **106**. In addition, clients **108**, **110**, and **112** also are connected to a network **102**. These clients **108**, **110**, and **112** may be, for example, personal computers or network computers. For purposes of this application, a network computer is any computer, coupled to a network, which receives a program or other application from another computer coupled to the network. In the depicted example, server **104** provides data, such as boot files, operating system images, and applications to clients **108-112**. Clients **108**, **110**, and **112** are clients to server **104**. Distributed data processing system **100** may include additional servers, clients, and other devices not shown. In the depicted example, distributed data processing system **100** is the Internet with network **102**

representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host computers, consisting of thousands of commercial, government, educational and other computer systems that route data and messages. Of course, distributed data processing system **100** also may be implemented as a number of different types of networks, such as for example, an intranet, a local area network (LAN), or a wide area network (WAN). **Figure 1** is intended as an example, and not as an architectural limitation for the present invention.

With reference now to **Figure 2**, a block diagram illustrates a data processing system in which the present invention may be implemented. Data processing system **200** is an example of a client computer. Data processing system **200** employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures such as Accelerated Graphics Port (AGP) and Industry Standard Architecture (ISA) may be used. Processor **202** and main memory **204** are connected to PCI local bus **206** through PCI bridge **208**. PCI bridge **208** also may include an integrated memory controller and cache memory for processor **202**. Additional connections to PCI local bus **206** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **210**, SCSI host bus adapter **212**, and expansion bus interface **214** are connected to PCI local bus **206** by direct component connection. In contrast, audio adapter **216**,

graphics adapter **218**, and audio/video adapter **219** are connected to PCI local bus **206** by add-in boards inserted into expansion slots. Expansion bus interface **214** provides a connection for a keyboard and mouse adapter **220**, modem **222**, and additional memory **224**. Small computer system interface (SCSI) host bus adapter **212** provides a connection for hard disk drive **226**, tape drive **228**, and CD-ROM drive **230**. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors.

An operating system runs on processor **202** and is used to coordinate and provide control of various components within data processing system **200** in **Figure 2**. The operating system may be a commercially available operating system such as OS/2, which is available from International Business Machines Corporation. "OS/2" is a trademark of International Business Machines Corporation. An object oriented programming system such as Java may run in conjunction with the operating system and provides calls to the operating system from Java programs or applications executing on data processing system **200**. "Java" is a trademark of Sun Microsystems, Inc. Instructions for the operating system, the object-oriented operating system, and applications or programs are located on storage devices, such as hard disk drive **226**, and may be loaded into main memory **204** for execution by processor **202.**

Those of ordinary skill in the art will appreciate that the hardware in **Figure 2** may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash ROM (or equivalent nonvolatile

memory) or optical disk drives and the like, may be used in addition to or in place of the hardware depicted in **Figure 2**. Also, the processes of the present invention may be applied to a multiprocessor data processing system.

For example, data processing system **200**, if optionally configured as a network computer, may not include SCSI host bus adapter **212**, hard disk drive **226**, tape drive **228**, and CD-ROM **230**, as noted by dotted line **232** in **Figure 2** denoting optional inclusion. In that case, the computer, to be properly called a client computer, must include some type of network communication interface, such as LAN adapter **210**, modem **222**, or the like. As another example, data processing system **200** may be a stand-alone system configured to be bootable without relying on some type of network communication interface, whether or not data processing system **200** comprises some type of network communication interface. As a further example, data processing system **200** may be a Personal Digital Assistant (PDA) device which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data.

The depicted example in **Figure 2** and above-described examples are not meant to imply architectural limitations. For example, data processing system **200** also may be a notebook computer or hand held computer in addition to taking the form of a PDA. Data processing system **200** also may be a kiosk or a Web appliance.

The present invention provides an improved method, apparatus, and computer implemented instructions for

securing cookies in a data processing system. In particular, the present invention provides a mechanism for a secure cookie cache. Before issuing a cookie to a remote host, the cookie is cached with an IP address associated with the remote host. Of course some other identifier may be used other than an IP address to identify the remote host. When the remote host offers a cookie to the client, a determination is made as to whether a match is present between the cached cookie and the cookie offered by the remote host. If a match between both the cookie and the IP address is present, the cookie is accepted and the remote host is allowed to access the particular resource, such as a file on a disk. If a match is not present, the cookie is rejected and rights or access to resources on the client machine are prevented. Additionally, the secure cookie cache of the present invention also may prevent the use of a cookie by any other system other than the intended remote host. For example, if a cookie is intercepted by network "ease dropper" system it would be invalid for any system accept for the specific remote host to which the cookie was issued. Thus, the cookie matches, but the IP address does not match, the cookie is not accepted in these examples.

Turning next to **Figure 3**, a block diagram of a browser program is depicted in accordance with a preferred embodiment of the present invention. A browser is an application used to navigate or view information or data in a distributed database, such as the Internet or the World Wide Web. Browser **300** is an example of an application on a data processing system that may

implement processes to manage the acceptance of a cookie from a remote host or server.

In this example, browser **300** includes a user interface **302**, which is a graphical user interface (GUI) that allows the user to interface or communicate with browser **300**. This interface provides for selection of various functions through menus **304** and allows for navigation through navigation **306**. For example, menu **304** may allow a user to perform various functions, such as saving a file, opening a new window, displaying a history, and entering a URL. Navigation **306** allows for a user to navigate various pages and to select web sites for viewing. For example, navigation **306** may allow a user to see a previous page or a subsequent page relative to the present page. Preferences such as those illustrated in **Figure 3** may be set through preferences **308**.

Communications **310** is the mechanism with which browser **300** receives documents and other resources from a network such as the Internet. Further, communications **310** is used to send or upload documents and resources onto a network. In the depicted example, communications **310** uses HTTP. Other protocols may be used depending on the implementation. In this example, communications **310** may implement the processes used to generate, send, and receive a cookie. Documents that are received by browser **300** are processed by language interpretation **312**, which includes an HTML unit **314** and a JavaScript unit **316**. Language interpretation **312** will process a document for presentation on graphical display **318**. In particular,

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HTML statements are processed by HTML unit **314** for presentation while JavaScript statements are processed by JavaScript unit **316**.

Graphical display **318** includes layout unit **320**, rendering unit **322**, and window management **324**. These units are involved in presenting web pages to a user based on results from language interpretation **312**.

Browser **300** is presented as an example of a browser program in which the present invention may be embodied. Browser **300** is not meant to imply architectural limitations to the present invention. Presently available browsers may include additional functions not shown or may omit functions shown in browser **300**. A browser may be any application that is used to search for and display content on a distributed data processing system. Browser **300** may be implemented using known browser applications, such as Netscape Navigator or Microsoft Internet Explorer. Netscape Navigator is available from Netscape Communications Corporation while Microsoft Internet Explorer is available from Microsoft Corporation.

With reference now to **Figure 4**, a diagram of a cookie cache is depicted in accordance with a preferred embodiment of the present invention. In this example, cookie cache **400** contains three entries for three different hosts. Each of these hosts is identified by an IP address. In entry **402**, the IP address for the host is 27.146.16.8. In entry **404**, the host is identified by the IP address 27.145.3.54, and in entry **406**, the host is identified by the IP address 140.12.34.8. Multiple cookies may be accepted from a different host as can be

seen in **Figure 4**. In this example, entry **402** contains three cookies, entry **404** contains one cookie, and entry **406** contains two cookies. Of course, any number of cookies for a particular host may be stored in cookie cache **400**. When a cookie is presented to the client machine for acceptance, the process of the present invention in a Web browser are used to compare that cookie to the cookies in cookie cache **400**. The comparison is made by comparing both the cookie and the IP address. A match between both the IP address and the cookie must be present in order for the cookie to be accepted in this example. Otherwise acceptance of the cookie is denied.

With reference now to **Figure 5**, a flowchart of a process for generating cookies is depicted in accordance with a preferred embodiment of the present invention. In this example, a request is received from a host for access to a resource on the client machine (step **500**). In this example, the cookie may be a disk location of a file on the client machine. It may be necessary for the host to write to a file on the client. In this example, the host may request to write to a file having path name such as: c:\temp\birds\robin.gif. A cookie is then generated (step **502**). The client machine converts the ASCII string of the file path name into a number representing the disk location of the file. This disk location number is placed into a cookie. This cookie is then sent to the host (step **504**). The cookie is used by the remote machine when referencing the particular file. For example, instead of writing data explicitly using the path name "c:\temp\birds\robin.gif", the number is used.

This allows the client machine to avoid having to convert the string for the path name into the disk location for every write to the file. The IP address and the cookie are stored in a cookie cache (step **506**) with the process terminating thereafter. This cookie cache is, for example, cookie cache **400** in **Figure 4**.

With reference now to **Figure 6**, a flowchart of a process for managing the receipt of cookies is depicted in accordance with a preferred embodiment of the present invention. The process begins by receiving a cookie from a host (step **600**). This cookie and the IP address of the host are compared to the cookie and IP addresses in the cookie cache (step **602**). A determination is made as to whether a match is present between the IP address of the host and the cookie received as well as the IP address and a cookie within a cookie cache (step **604**). If a match is present, the cookie is accepted (step **606**) with the process terminating thereafter. Otherwise, the cookie is denied (step **608**) with the process also terminating thereafter.

Thus, the present invention provides a secure mechanism for managing the acceptance of cookies at a client machine. This mechanism prevents a malicious host from altering the cookie to allow access to other resources other than those authorized by the client. For example, the mechanism of the present invention prevents a host from altering a cookie for the path c:\temp\birds\robin.gif to c:\autoexec.bat. This is prevented because the mechanism of the present invention stores the IP address of the host as well as the cookie itself in a cookie cache. When a cookie is sent back to

the client for acceptance, a comparison of the IP address of the host presenting the cookie as well as the cookie itself are compared. If the cookie has been altered, a match will not be present. In that instance, the cookie is rejected. Further, the present invention also provides an advantage that eave droppers are unable to access the client system through the use of an intercepted cookie. Even if a cookie is intercepted, it would be invalid for any system but the specific remote host to which the cookie was issued.

It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in a form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media such a floppy disc, a hard disk drive, a RAM, and CD-ROMs and transmission-type media such as digital and analog communications links.

The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. For example, although the identifier used to identify a server was illustrated in the form of an IP address, other types of identifiers could be used. For

example, the URL for a server may be used as the identifier. The embodiment was chosen and described in order to best explain the principles of the invention the practical application and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

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CLAIMS:

What is claimed is:

1. A method in a data processing system for providing access to resources within the data processing system, the method comprising the data processing system implemented steps of:

receiving a request from a requestor to access a resource in the data processing system;

sending a first cookie to the requestor in response to the request, wherein the cookie is used to access the resource;

storing an identification of the requestor and the cookie to form a stored identification and a stored cookie;

responsive to receiving a second cookie from a source, comparing an identification of the source and the second cookie with the stored identification and the stored cookie; and

responsive to a match between the identification of the source and the second cookie and the stored identification and the stored cookie, allowing access to the resource.

2. The method of claim 1, wherein access to the resource is allowed by accepting the second cookie.

3. The method of claim 1 further comprising:

responsive to an absence of a match between the identification of the source and the second cookie and the stored identification and the stored cookie,

rejecting the second cookie.

4. The method of claim 1, wherein the resource is a file and the first cookie identifies disk location of the file.

5. The method of claim 1, wherein the source is a web server.

6. The method of claim 1, wherein the step of storing an identification of the source and the first cookie to form a stored identification and a stored cookie comprises:

storing the identification of the source and the first cookie in a cache.

7. The method of claim 6, wherein the identification is an Internet protocol address.

8. The method of claim 1, wherein the steps of receiving, sending, storing, comparing, and allowing are performed in a browser.

9. The method of claim 1, wherein the resource is a file having a path and further comprising:

generating a disk location number from the path; and

placing the disk location number into the first cookie.

10. A method in a data processing system for processing a cookie, the method comprising the data processing

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system implemented steps of:

receiving a request from a source to access a resource in the data processing system;

sending a cookie to the source to form a sent cookie, wherein the sent cookie is used to access the resource;

responsive to receiving a subsequent cookie, authenticating the subsequent cookie with the cookie; and

responsive to authenticating the subsequent cookie, allowing access to the resource.

11. The method of claim 10 further comprising:

storing the sent cookie and an identification of the source.

12. The method of claim 10, wherein the sent cookie and the identification of the source are stored in a cache.

13. The method of claim 12, wherein the identification is a stored identification and wherein the authenticating step comprises:

comparing the stored identification with an identification of a source for the subsequent cookie; and

comparing the sent cookie with the subsequent cookie.

14. The method of claim 10, wherein the source is a Web server.

15. The method of claim 10, wherein the resource is a file.

16. The method of claim 15, wherein the cookie includes a disk location of the file.

17. A data processing system comprising:

a cache;

a cookie management process, wherein the cookie management process generates a cookie in response to receiving a request to access a resource within the data processing system from a requestor; sends the cookie to the requestor, stores the cookie and an identification of the requestor in the cache; responsive to being presented a received cookie from a source, compares the cookie and the identification of the requestor to the received cookie and the source; and allows access to the resource in response to a match between the cookie and the identification of the requestor with the received cookie and the source.

18. The data processing system of claim 17, wherein the requestor is a server.

19. The data processing system of claim 17, wherein the resource is a file.

20. The data processing system of claim 17, wherein the identification of the requestor and the identification of the source are Internet protocol addresses.

21. A data processing system for providing access to resources within the data processing system, the data

processing system comprising:

receiving means for receiving a request from a requestor to access a resource in the data processing system;

sending means for sending a first cookie to the requestor, wherein the first cookie is used to access the resource;

storing means for storing an identification of the requestor and the first cookie to form a stored identification and a stored cookie;

comparing means, responsive to receiving a second cookie from a source, for comparing an identification of the source and the second cookie with the stored identification and the stored cookie; and

allowing means, responsive to a match between the identification of the source and the second cookie and the stored identification and the stored cookie, for allowing access to the resource.

22. The data processing system of claim 21, wherein access to the resource is allowed by accepting the second cookie.

23. The data processing system of claim 21 further comprising:

rejecting means, responsive to an absence of a match between the identification of the source and the second cookie and the stored identification and the stored cookie, for rejecting the second cookie.

24. The data processing system of claim 21, wherein the

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resource is a file and the first cookie identifies disk location of the file.

25. The data processing system of claim 21, wherein the source is a web server.

26. The data processing system of claim 21, wherein the storing means for storing an identification of the source and the first cookie to form a stored identification and a stored cookie comprises:

storing means for storing the identification of the source and the first cookie in a cache.

27. The data processing system of claim 26, wherein the identification is an Internet protocol address.

28. The data processing system of claim 21, wherein the receiving means, sending means, storing means, comparing means, and allowing means are performed in a browser.

29. The data processing system of claim 21, wherein the resource is a file having a path and further comprising:

generating means for generating a disk location number from the path; and

placing means for placing the disk location number into the first cookie.

30. A data processing system for processing a cookie, the data processing system comprising:

receiving means for receiving a request from a source to access a resource in the data processing

system;

sending means for sending a cookie to the source to form a sent cookie, wherein the sent cookie is used to access the resource;

authenticating means, responsive to receiving a subsequent cookie, for authenticating the subsequent cookie with the cookie; and

allowing means, responsive to authenticating the subsequent cookie, for allowing access to the resource.

31. The data processing system of claim 30 further comprising:

storing means for storing the sent cookie and an identification of the source.

32. The data processing system of claim 30, wherein the sent cookie and the identification of the source are stored in a cache.

33. The data processing system of claim 32, wherein the identification is a stored identification and wherein the authenticating means comprises:

first comparing means for comparing the stored identification with an identification of a source for the subsequent cookie; and

second comparing means for comparing the sent cookie with the subsequent cookie.

34. The data processing system of claim 30, wherein the source is a Web server.

35. The data processing system of claim 30, wherein the resource is a file.

36. The data processing system of claim 35, wherein the cookie includes a disk location of the file.

37. A computer program product in a computer readable medium for providing access to resources within the data processing system, the computer program product comprising:

first instructions for receiving a request from a requestor to access a resource in the data processing system;

second instructions for sending a first cookie to the requestor, wherein the first cookie is used to access the resource;

third instructions for storing an identification of the requestor and the first cookie to form a stored identification and a stored cookie;

fourth instructions, responsive to receiving a second cookie from a source, for comparing an identification of the source and the second cookie with the stored identification and the stored cookie; and

fifth instructions, responsive to a match between the identification of the source and the second cookie and the stored identification and the stored cookie, for allowing access to the resource.

38. A computer program product in a computer readable medium for processing a cookie, the computer program product comprising:

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first instructions for receiving a request from a source to access a resource in the data processing system;

second instructions for sending a cookie to the source to form a sent cookie, wherein the sent cookie is used to access the resource;

third instructions, responsive to receiving a subsequent cookie, for authenticating the subsequent cookie with the cookie; and

fourth instructions, responsive to authenticating the subsequent cookie, for allowing access to the resource.

Docket No. AUS990809US1

ABSTRACT OF THE DISCLOSURE

METHOD AND APPARATUS FOR SECURING A COOKIE CACHE IN A DATA PROCESSING SYSTEM

A method and apparatus in a data processing system for providing access to resources within the data processing system. A request is received from a requestor to access a resource in the data processing system. A cookie is sent to the requestor, wherein the cookie is used to access the resource. An identification of the requestor and the cookie is stored to form a stored identification and a stored cookie. Responsive to receiving a subsequent cookie from a source, an identification of the source and the cookie is compared with the stored identification and the stored cookie. Responsive to a match between the identification of the source and the cookie and the stored identification and the stored cookie, access to the resource is allowed.

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Figure 1

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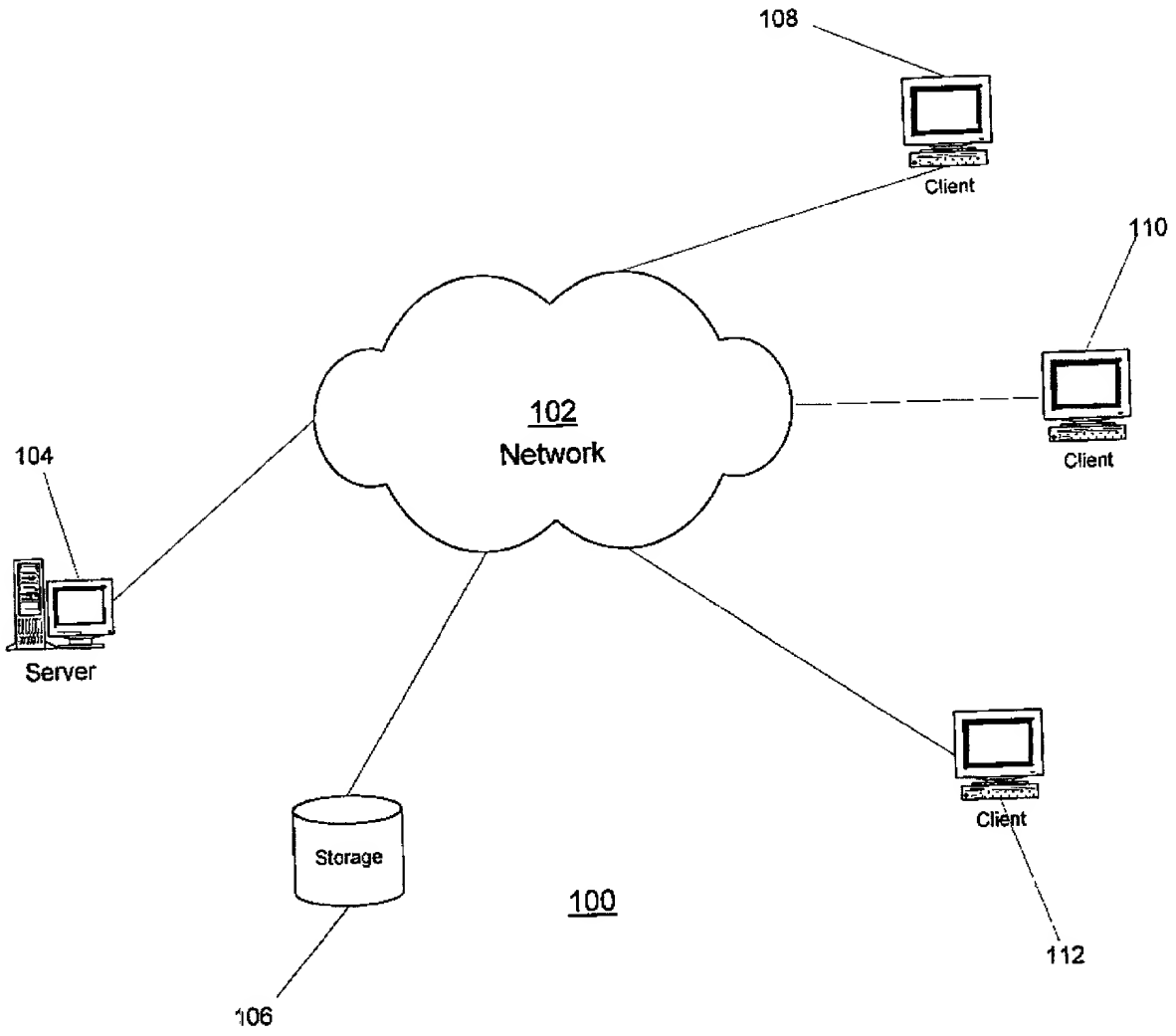

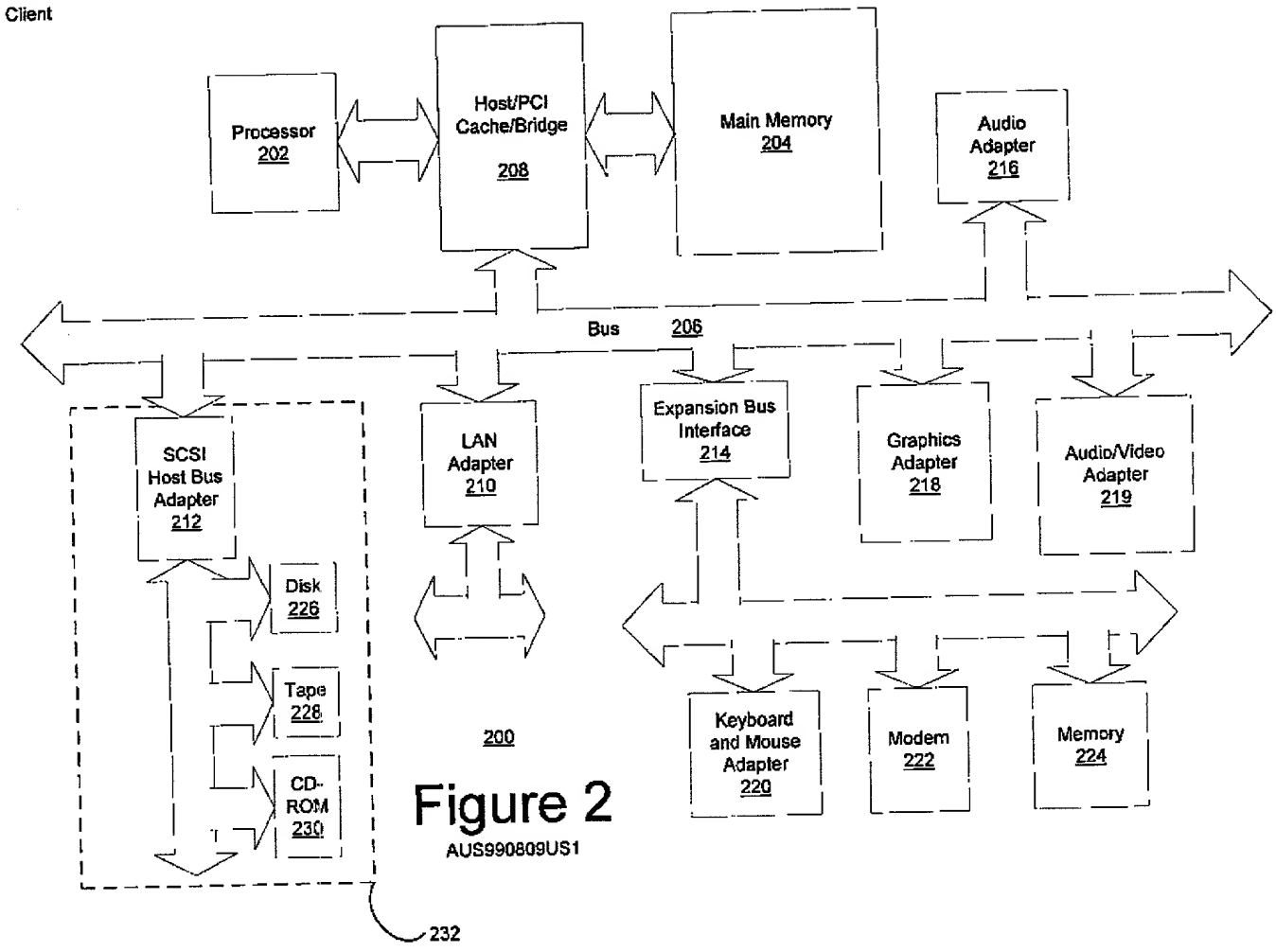

Figure 2

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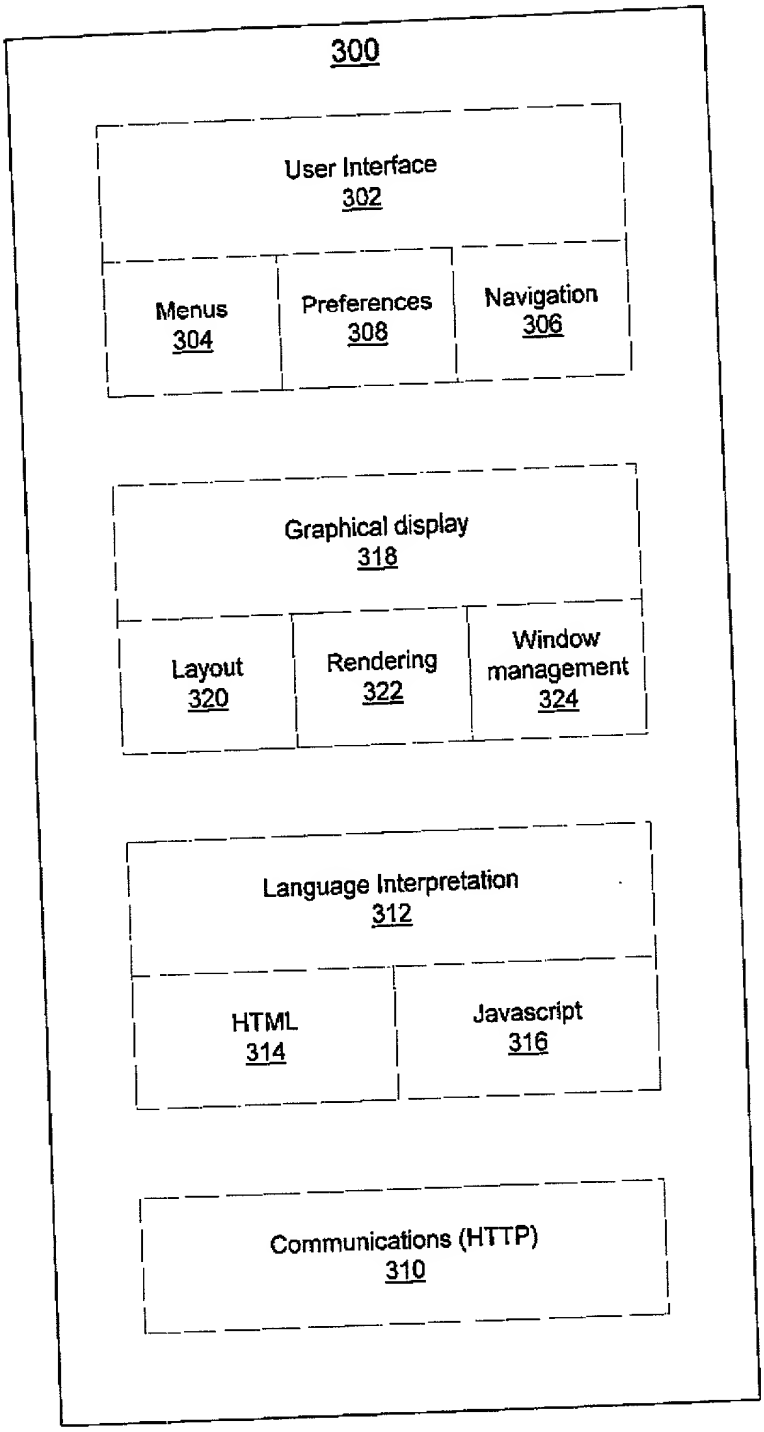

Figure 3

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Figure 4
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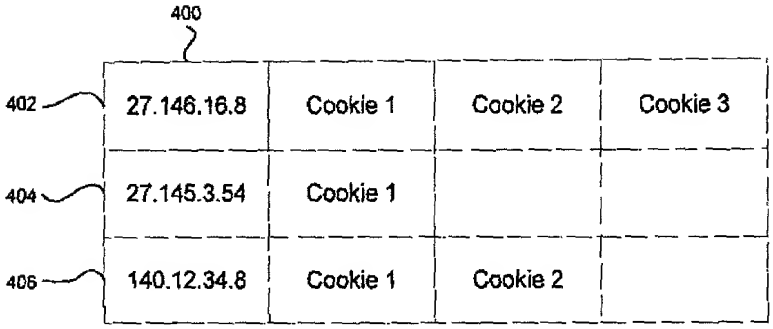

Figure 5
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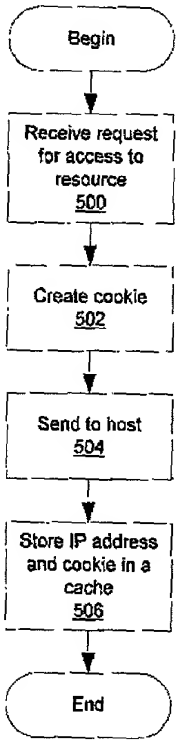
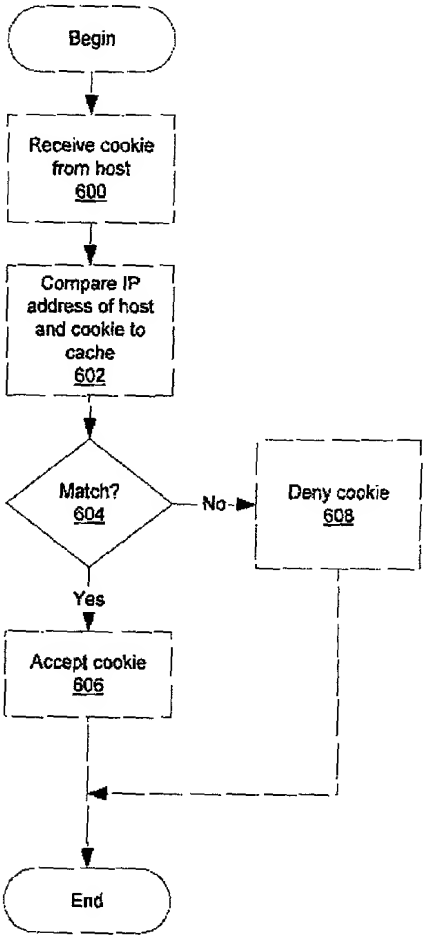


Figure 6
AUS990809US1



DOCKET NUMBER: AUS990809US1

DECLARATION AND POWER OF ATTORNEY FOR

PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD AND APPARATUS FOR SECURING A COOKIE CACHE IN A DATA PROCESSING SYSTEM

the specification of which (check one)

X is attached hereto.

__ was filed on _____
as Application Serial No._____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):			Priority Claimed
_____ (Number)	_____ (Country)	_____ (Day/Month/Year)	___ Yes___ No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

_____ (Application Serial #)	_____ (Filing Date)	_____ (Status)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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DOCKET NUMBER: AUS990809US1

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